

STATE AID FOR AGRICULTURE.¹

MR. T. S. DYMOND, who has charge of the agricultural education in the county of Essex, has published a valuable little pamphlet on the State aid given to agriculture in Denmark and Hungary, two countries with which he is personally familiar. Both countries can show great gains to the farming industry during the past ten or twenty years, mainly the result of improved education and organisation, but they present an interesting contrast in the way the work has been done. In Denmark the initiative has come from the individual; the State has simply stepped in and assisted whatever institutions for education and research had been started by the people themselves. It is true the Government has founded and liberally endowed the Royal Agricultural and Veterinary College at Copenhagen, and also maintains the higher research stations, but to the cooperative societies and other commercial developments, which have done so much for Danish agriculture, it gives little or no direct help.

In Hungary the conditions are very different; the whole organisation has been created from above; not only has the State founded an extraordinarily complete department for education and research, but it has not hesitated to enter boldly into business and provide financial assistance to the farmers in distressed districts. It develops horse and cattle breeding by the help of great State farms, it has created a flourishing fruit industry, founded credit banks and cooperative societies, and generally adopted the "paternal" standpoint of fostering the farming interests wherever its assistance could be effective. Despite the great success of its efforts, Mr. Dymond considers that there are not wanting signs of State aid having gone too far in Hungary and having become State interference, resulting in a certain measure of discouragement to the enterprise of individuals.

Turning to our own country in the light of these examples, Mr. Dymond would limit the assistance of the State to education and research; the whole genius of the English farmer is opposed to State aid in his business matters. As Mr. Dymond points out, many parts of the country already possess considerable, if but slightly appreciated, facilities for agricultural education; farmers can get their sons educated at very low rates, their manures analysed, their seeds tested, they can obtain expert advice of all kinds as cheaply as in any foreign country. Only if you cross the county boundary none of these good things may be available, and an immense waste is going on through the want of system and the localisation in particular counties of the work that is being done.

Mr. Dymond argues for more central direction, and urges that the Board of Agriculture, which financially assists so much of the work, should assume a certain measure of control and bring the whole country into line.

Appositely enough, on the heels of Mr. Dymond's pamphlet comes the annual report of the Board of Agriculture on the distribution of grants for education and research in 1902-03. From this we learn that the Board gives substantial financial aid, 800*l.* a year with an extra 200*l.* for the maintenance of a farm, to seven colleges of university standing in England and Wales, and also grants smaller sums to eight other schools or colleges, the total expenditure amounting to 8900*l.* per annum. This, however, represents only a portion of the whole expenditure on these institutions; so far as can be made out from the report, the

county councils concerned contributed 29,127*l.*, which does not in all cases include capital expenditure and outlay on the farm. The total expenditure of all the county councils in England and Wales on agricultural education amounted to 87,732*l.* in 1901-02, and if we consider the distribution of this money, the manner in which comparatively minor matters, like poultry and bee-keeping and manual processes, bulk in the account, a very strong case is made out for more central control, for at present the Board of Agriculture only *inspects* the expenditure of one-third of the whole sum.

The weak side of the Board's outlay is seen in the "special grants for experiment and research." The total allotted is 864*l.* 6*s.* 1*d.*; is this magnificent sum to be taken as an index of the official opinion of the importance of English agriculture or of the value of research? The distribution, too, is curious; 225*l.* is for repetitions of Dr. Somerville's interesting "manure and mutton" experiment, 84*l.* 6*s.* 1*d.* is for trials of maize growing, 50*l.* for experiments on wheat; the Somerset County Experimental Farm, with the astonishing proviso that care shall be taken to keep records in future, gets 100*l.*, as does the "Aberdeen Agricultural Research Association." Rothamsted, which we were told in the *Times* last year is being starved for want of funds, gets just nothing at all. There seems a want of proportion somewhere.

ROBERT ETHERIDGE, F.R.S.

IN the death of Robert Etheridge geological science has lost a distinguished worker who was actively engaged for upwards of fifty years.

Born in Herefordshire on December 3, 1819, he settled in early years in Bristol, and was for some time employed in a business house.

His scientific career commenced in 1850, when he was appointed curator to the Museum of the Philo-sophical Society in that city. This post he held for seven years, during which period he made himself thoroughly acquainted with the local geology, extending his observations into the region beyond Gloucester and Cheltenham, and becoming an active member of the Cotteswold Naturalists' Field Club. Through the influence of Sir Roderick Murchison (who had in 1834 published an "Outline of the Geology of the Neighbourhood of Cheltenham") he was in 1857 appointed one of the palæontologists to the Geological Survey, working at first under J. W. Salter, and assisting Huxley at the Royal School of Mines by giving demonstrations in palæontology.

In 1859 he published his first work, entitled "Geology: its Relation and Bearing upon Mining," being the substance of three lectures which he had delivered before the Bristol Mining School.

During the earlier portion of his service on the Geological Survey, he was occupied chiefly in arranging and naming the Invertebrata of the Secondary and newer strata, and after Salter had retired the Palæozoic fossils also came directly under his charge. Later on, when Jukes questioned the age and relations of the Devonian formation, Etheridge received instructions to re-investigate its palæontology and stratigraphical divisions, and the results of this arduous and important task were published in 1867 in a memorable paper "On the Physical Structure of West Somerset and North Devon, and on the Palæontological Value of the Devonian Fossils."

The list of his published papers is not a long one, but he contributed articles on the Rhætic beds of Aust, Westbury-on-Severn, Watchet and Penarth, and on the dolomitic conglomerate of the Bristol area. His work on the Geological Survey was mainly in the lists of fossils which he prepared for numerous memoirs

¹ "Continental State-aid for Agriculture." By T. S. Dymond. (Chelmsford, 1903.)

"Annual Report on the Distribution of Grants for Agriculture and Research in the Year 1902-3." (London: The Board of Agriculture and Fisheries, 1903.)

from 1858 to 1881. In 1875 he revised and edited a third edition of John Phillips's "Geology of the Yorkshire Coast." For many years he devoted all his spare time to the preparation of a list of British fossils, stratigraphically and zoologically arranged. Of this great work the first volume, dealing with the Palæozoic species, was published in 1888. Two other volumes, on the Mesozoic and Cainozoic fossils, have remained in MS. In all more than 18,000 species were catalogued.

In 1881 Mr. Etheridge, greatly to the regret of his colleagues on the Geological Survey, was appointed assistant keeper in the geological department of the British Museum, and this post he held with much advantage to that institution for ten years, when he retired from the public service.

He was elected a fellow of the Royal Society in 1871. In 1880 the Murchison medal of the Geological Society was awarded to him, and in the same year he was elected president of that Society. The two addresses which he delivered at successive anniversary meetings of the Geological Society were voluminous papers on the analysis and distribution of the British Palæozoic and Jurassic fossils.

These essays, which were based on his great catalogue, formed a foundation for a subsequent elaborate book (published in 1885) on "Stratigraphical Geology and Palæontology." This work, ostensibly issued as part ii. of a second edition of John Phillips's "Manual of Geology, Theoretical and Practical," was almost wholly re-written and very much enlarged by Mr. Etheridge, so that very little of the original text remained. No less than 116 tables of organic remains were incorporated, and very full particulars were also given of the strata in various parts of the British islands.

The stratigraphical knowledge which Mr. Etheridge acquired in his early days at Bristol, and afterwards with the field officers on the Geological Survey, qualified him to give expert advice on economic questions relating to coal, water-supply, &c. In consequence his assistance was frequently sought by engineers and others. During recent years he was engaged as geological adviser to the promoters of the Dover coal-boring, and was occupied on matters connected with it until but a short time before his decease.

A man of untiring energy and vigour, he seemed personally never to grow older, and it was not until lately that he lost his upright bearing, but he never lost the cheery, kindly disposition which endeared him to all his friends and associates.

He died after a few days' illness, the result of a chill, on December 18, soon after he had completed his eighty-fourth year. A good portrait of him was inserted by Lady Prestwich in the "Life and Letters of Sir Joseph Prestwich."

H. B. W.

NOTES.

It is announced that the committee of the Parisian Press Association has decided upon the award of the prize of 100,000 francs placed at its disposal by M. Osiris. The committee has resolved to divide this sum between the two inventions which have in recent times most contributed to the honour of French science. The sum of 60,000 francs has been awarded to Mme. Curie for the continuation of her researches into radium, and 40,000 francs to M. Branly for his labours in connection with wireless telegraphy.

THE sum of 30,000 francs has been placed at the disposal of Prof. d'Arsonval by the *Matin*, of Paris, in order to enable him to continue his researches in connection with the properties of radium.

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AMONG the numerous special kinds of radiation recently discovered, not the least interesting are the *n*-rays of M. Blondlot. These rays, which were first discovered in the radiations from incandescent bodies, pass readily through aluminium, glass, black paper, and other substances, but are arrested by lead or by moistened paper. They were at first studied by means of their action upon small electric sparks, but a more convenient means of observing them is due to their action upon feebly illuminated phosphorescent bodies, the luminosity of which is increased when the Blondlot rays fall on them. In a more recent paper, M. Blondlot has found that bodies in a state of strain, such as tempered steel and unannealed glass, give off these rays spontaneously and continuously at the ordinary temperature, and in the current number of the *Comptes rendus* M. A. Charpentier shows that these rays are also emitted by the human body, especially by the muscles and nerves. He points out that this effect may prove to be of the greatest importance in the case of the nerves, as up to the present no external reactions of the nervous system have been observed, and a new field of studies in physiology and medicine is thus opened up.

DR. OSANN, of Berlin, has been appointed professor of mechanics at Clausthal, and Dr. Kippenberger and Dr. Georg Frerichs have been appointed professors of chemistry in the University of Bonn.

THE Venetian Academy of Sciences, Letters and Arts, offers prizes of 3000 lire under the Querini-Stampaglia foundation for monographs on the following subjects:—The lakes of the Venetian district, treated from a physiographic and biological standpoint; the works of Manuzi as a critic of Greek and Latin literature; the origins of Venetian painting; and advances in the projective geometry of algebraic surfaces of two dimensions in space of *n* dimensions. Under the Cavalli foundation, a similar prize is offered for an essay on the effects of modern social and economic conditions, &c., on landlords and farmers, with especial reference to the Venetian provinces. Under the Balbi Valier foundation an award of the same amount is offered for advances in medicine or surgery for the period 1902–3, and under the Minich foundation a prize of 3000 lire is offered for embryological researches on the development of the larynx, the trachea, and the lungs in vertebrates and birds. The last day for sending in essays for the Stampaglia prize, on the Venetian lakes, and the Balbi Valier and Minich prizes is December 31, 1903; for the remaining prizes the essays are due at the end of subsequent years.

IN the course of excavations on the Lulworth Castle Estate, in Dorset, a number of bronze relics have been found, and have been sent to the Dorset County Museum on temporary loan. The most important object is a bronze sword, 24½ inches long, and, though broken, it is in a fine state of preservation. Other relics are a socket celt, a gold or heavily gilt bronze finger ring, a socket gouge, a hilt of a sword, an object which is believed to be one of the fittings of a car, supposed harness fittings, and a bronze crook.

THE following telegram was received from Mr. W. S. Bruce, leader of the Scottish Antarctic Expedition, at the offices in Edinburgh on December 17:—"Buenos Ayres. Scotia Stanley. December 2. Refitting here. Hydrograph surveyed 4000 miles unexplored ocean; 70° 25' south, 17 to 45 W.; 2700 fathoms trawled there; wintered Orkneys; detailed survey. Mossman and five men continue first-class meteorological, magnetical, biological station. Ramsay died August 6. All others robust; Scotia splendid.